

# INTERNATIONAL JOURNAL FOR LEGAL RESEARCH AND ANALYSIS



Open Access, Refereed Journal Multi-Disciplinary  
Peer Reviewed

[www.ijlra.com](http://www.ijlra.com)

## **DISCLAIMER**

No part of this publication may be reproduced or copied in any form by any means without prior written permission of Managing Editor of IJLRA. The views expressed in this publication are purely personal opinions of the authors and do not reflect the views of the Editorial Team of IJLRA.

Though every effort has been made to ensure that the information in Volume II Issue 7 is accurate and appropriately cited/referenced, neither the Editorial Board nor IJLRA shall be held liable or responsible in any manner what sever for any consequences for any action taken by anyone on the basis of information in the Journal.

Copyright © International Journal for Legal Research & Analysis

## EDITORIALTEAM

### EDITORS

#### **Dr. Samrat Datta**

*Dr. Samrat Datta Seedling School of Law and Governance, Jaipur National University, Jaipur. Dr. Samrat Datta is currently associated with Seedling School of Law and Governance, Jaipur National University, Jaipur. Dr. Datta has completed his graduation i.e., B.A.LL.B. from Law College Dehradun, Hemvati Nandan Bahuguna Garhwal University, Srinagar, Uttarakhand. He is an alumnus of KIIT University, Bhubaneswar where he pursued his post-graduation (LL.M.) in Criminal Law and subsequently completed his Ph.D. in Police Law and Information Technology from the Pacific Academy of Higher Education and Research University, Udaipur in 2020. His area of interest and research is Criminal and Police Law. Dr. Datta has a teaching experience of 7 years in various law schools across North India and has held administrative positions like Academic Coordinator, Centre Superintendent for Examinations, Deputy Controller of Examinations, Member of the Proctorial Board*



#### **Dr. Namita Jain**



*Head & Associate Professor*

*School of Law, JECRC University, Jaipur Ph.D. (Commercial Law) LL.M., UGC-NET Post Graduation Diploma in Taxation law and Practice, Bachelor of Commerce.*

*Teaching Experience: 12 years, AWARDS AND RECOGNITION of Dr. Namita Jain are - ICF Global Excellence Award 2020 in the category of educationalist by I Can Foundation, India. India Women Empowerment Award in the category of "Emerging Excellence in Academics by Prime Time & Utkrish Bharat Foundation, New Delhi. (2020). Conferred in FL Book of Top 21 Record Holders in the category of education by Fashion Lifestyle Magazine, New Delhi. (2020). Certificate of Appreciation for organizing and managing the Professional Development Training Program on IPR in Collaboration with Trade Innovations Services, Jaipur on March 14th, 2019*

## Mrs.S.Kalpna

Assistant professor of Law

*Mrs.S.Kalpna, presently Assistant professor of Law, VelTech Rangarajan Dr.Sagunthala R & D Institute of Science and Technology, Avadi. Formerly Assistant professor of Law,Vels University in the year 2019 to 2020, Worked as Guest Faculty, Chennai Dr.Ambedkar Law College, Pudupakkam. Published one book. Published 8Articles in various reputed Law Journals. Conducted 1Moot court competition and participated in nearly 80 National and International seminars and webinars conducted on various subjects of Law. Did ML in Criminal Law and Criminal Justice Administration.10 paper presentations in various National and International seminars. Attended more than 10 FDP programs. Ph.D. in Law pursuing.*



## Avinash Kumar



*Avinash Kumar has completed his Ph.D. in International Investment Law from the Dept. of Law & Governance, Central University of South Bihar. His research work is on "International Investment Agreement and State's right to regulate Foreign Investment." He qualified UGC-NET and has been selected for the prestigious ICSSR Doctoral Fellowship. He is an alumnus of the Faculty of Law, University of Delhi. Formerly he has been elected as Students Union President of Law Centre-1, University of Delhi. Moreover, he completed his LL.M. from the University of Delhi (2014-16), dissertation on "Cross-border Merger & Acquisition"; LL.B. from the University of Delhi (2011-14), and B.A. (Hons.) from Maharaja Agrasen College, University of Delhi. He has also obtained P.G. Diploma in IPR from the Indian Society of International Law, New Delhi. He has qualified UGC – NET examination and has been awarded ICSSR – Doctoral Fellowship. He has published six-plus articles and presented 9 plus papers in national and international seminars/conferences. He participated in several workshops on research methodology and teaching and learning.*

## **ABOUT US**

INTERNATIONAL JOURNAL FOR LEGAL RESEARCH & ANALYSIS ISSN- 2582-6433 is an Online Journal is Monthly, Peer Review, Academic Journal, Published online, that seeks to provide an interactive platform for the publication of Short Articles, Long Articles, Book Review, Case Comments, Research Papers, Essay in the field of Law & Multidisciplinary issue. Our aim is to upgrade the level of interaction and discourse about contemporary issues of law. We are eager to become a highly cited academic publication, through quality contributions from students, academics, professionals from the industry, the bar and the bench. INTERNATIONAL JOURNAL FOR LEGAL RESEARCH & ANALYSIS ISSN 2582-6433 welcomes contributions from all legal branches, as long as the work is original, unpublished and is in consonance with the submission guidelines.

# **LAW IN THE AGE OF HYBRID INTELLIGENCE: GOVERNANCE CHALLENGES IN AI-HUMAN COLLABORATION**

AUTHORED BY - S SNEHA DUTT & ANUPAMA P J

School of Law

4th year BA LLB (H.)

CHRIST (Deemed to be University), Pune, Lavasa Campus

## **Abstract**

*The merging of Artificial Intelligence (AI) and Natural Intelligence (NI) has become the new force in shaping the future of humanity. With technology evolving further, the symbiosis between human intellect and machine capabilities is expected to revolutionize healthcare, education, environmental conservation, and social well-being. It introduces the integration of AI and NI, explaining how they together can become an excellent collaborative tool for making this world a better place to solve complex global issues. AI systems have been able to show incredible strides in processing huge datasets, repetitive tasks, and solving problems beyond the cognitive reach of human intelligence. However, when AI is integrated with the emotional intelligence, ethical reasoning, and creative thinking in human nature, its power is maximized. Through this collaboration, AI will improve human decision-making so that solutions become faster, more accurate, and more inclusive.*

*This paper emphasizes several areas in which the integration of AI and NI can lead to significant benefits to society. For instance, AI-based diagnostic tools in healthcare will complement human judgment to provide timely and accurate medical interventions. Similarly, personalized learning experiences, powered by AI and combined with human empathy, can tailor educational resources to individual needs and bridge gaps in access to quality education. With predictive and mitigation abilities, combined with human-driven advocacy for sustainability, AI can be used in a sustainable way to combat the climate crisis.*

*This paper discusses the ethical considerations of combining AI with NI. AI provides strong tools for the progress of society, but concerns over privacy, bias, and the human preservation of autonomy are issues that need to be addressed. In conclusion, it emphasizes the*

*responsibility for innovation by being collaborative to balance technological progress with human dignity, inclusivity, and fairness. This would mean a future where AI and NI co-evolve toward a problem for the world, and technology is there to serve human beings rather than replace them.*

**Keywords:** *Artificial intelligence, Natural intelligence, healthcare, education*

## RESEARCH PAPER

1. How can the integration of Artificial Intelligence (AI) and Natural Intelligence (NI) advance societal well-being in fields like healthcare, education, and environmental sustainability?
2. What are the main legal and ethical challenges posed by AI-human collaboration, especially regarding data privacy, algorithmic bias, and human autonomy?
3. How can governance frameworks be developed to ensure responsible, inclusive, and ethical AI deployment, particularly in the Indian context?
4. What are the risks of job displacement and economic inequality arising from AI adoption, and what strategies can be implemented to promote human-centered automation and reskilling?

***“Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.”***

**—Stephen Hawkins**

## INTRODUCTION

Artificial Intelligence (AI) is the capability of a computer or robot controlled by a computer to carry out tasks normally involving human intelligence and judgment. Although no AI system can yet duplicate the entire set of human cognitive capabilities, certain AI systems can equal or even exceed human performance in particular tasks.<sup>1</sup>

The official beginning of AI research was in 1956 when American computer scientist John McCarthy invited colleagues to the Dartmouth Conference, during which the term "Artificial Intelligence" was coined. The start of focused AI research was facilitated by government

---

<sup>1</sup> Schank, Roger C. "What is AI, anyway?." *AI magazine* 8.4 (1987): 59-59.

funding and academia at that time. The first AI models tested possible ways machines could be utilized to solve social issues utilizing knowledge-based systems and computational methods. However, as AI work continued, ethical questions were raised, especially regarding the consequences of having machines mimic human decision-making.<sup>2</sup> In the 1970s and late 1980s, AI work suffered major setbacks as government support decreased, and it became a time referred to as the "AI Winter." In the 21st century, AI revived itself because of concurrent progress in computational power, data availability, and theoretical breakthroughs. Today, AI technologies have become a part of many industries, assisting in the resolution of intricate problems in computer science and other fields. From Apple's Siri to autonomous vehicles, AI keeps advancing with speed, transforming several fields, such as healthcare, finance, education, and automation.<sup>3</sup>

Though AI has shown impressive capabilities in data analysis and automation, its true potential is unlocked when combined with human emotional intelligence, ethical thinking, and creativity. The union of AI and Natural Intelligence (NI) gives rise to revolutionary opportunities in healthcare, education, and sustainability. Through the synergy, AI supports human decision-making, making options quicker, more precise, and more inclusive. The subsequent sections will discuss how the convergence of AI and NI can define a future where technology is for humanity and not against it.<sup>4</sup>

## **DEFINING NATURAL INTELLIGENCE AND ITS CORE COMPONENTS**

Natural intelligence involves the inherent cognitive capacity possessed by human beings and animals, which is used to manoeuvre and fit in their respective surroundings. Such abilities are multidimensional and interconnected and allow organisms to deal with information, acquire experiences, and answer intricate problems. Among the basic ingredients is perception, or sensory information processing, in an effort to make sense of and comprehend the world immediately at hand. With perception, individuals identify patterns, perceive change, and react to stimuli, offering the basis for intelligent behaviour.<sup>5</sup>

---

<sup>2</sup> Muthukrishnan, Nikesh, et al. "Brief history of artificial intelligence." *Neuroimaging Clinics of North America* 30.4 (2020): 393-399.

<sup>3</sup> Kaul, Vivek, Sarah Enslin, and Seth A. Gross. "History of artificial intelligence in medicine." *Gastrointestinal endoscopy* 92.4 (2020): 807-812.

<sup>4</sup> Haenlein, Michael, and Andreas Kaplan. "A brief history of artificial intelligence: On the past, present, and future of artificial intelligence." *California management review* 61.4 (2019): 5-14.

<sup>5</sup> Sternberg, Robert J. "Components of human intelligence." *Cognition* 15.1-3 (1983): 1-48.

Another very important factor is learning, the ability to gain new knowledge and skills through experience, education, and observation. Learning enables the ability to adjust to new situations and change behaviour according to experience. Memory plays a vital role in enabling the storage, retention, and retrieval of information over time. It is vital in learning, decision-making, and maintaining the continuity of individual identity.<sup>6</sup> Reasoning and problem-solving activities involve scrutinizing information, making decisions, and developing solutions to problems. Good reasoning and problem-solving are essential in solving complicated and unpredictable problems. Finally, language and communication skills enable the expression of ideas, feelings, and information. Communication is necessary for social interaction, cooperation, and the passing on of culture. All of these elements work together in an integrated system to enable organisms to perceive their surroundings, make choices, and perform actions that contribute to survival and health.<sup>7</sup>

## **THE RATIONALE FOR INTEGRATING AI AND NI: A SYNERGISTIC APPROACH**

Natural intelligence is the built-in mental abilities that human and animal beings apply to make sense of and survive in their environment. They are intricate and linked, enabling organisms to get and process information, learn through experience, and solve complex problems. Perception is one of the primary components, the processing of sense data to translate and make sense of the direct environment. Perception allows for the recognition of patterns, detection of variations, and response to stimuli, the basis for intelligent action.<sup>8</sup>

The other essential element is learning, the ability to learn new information and skills through experience, instruction, and observation. Learning enables adaptation to new situations and adjustment of behaviour to past experiences. Memory is important because it allows information to be stored, retained, and retrieved later. It supports learning, making decisions, and ensuring the continuity of individual identity.<sup>9</sup>

Reasoning and problem-solving processes entail information analysis, forming conclusions,

---

<sup>6</sup> Van Gerven, Marcel. "Computational foundations of natural intelligence." *Frontiers in computational neuroscience* 11 (2017): 299674.

<sup>7</sup> Resnick, Lauren B., ed. *The nature of intelligence*. Taylor & Francis, 2024.

<sup>8</sup> Hunt, Earl B. *Artificial intelligence*. Academic Press, 2014.

<sup>9</sup> Fetzer, James H. "What is artificial intelligence?." *Artificial intelligence: its scope and limits*. Dordrecht: Springer Netherlands, 1990. 3-27.

and coming up with solutions to issues. Good reasoning and problem-solving are important to help deal with complicated and unpredictable situations. Finally, language and communication skills enable an individual to transmit thoughts, feelings, and facts. Communication supports social interaction, cooperation, and the passing on of culture. Together, all these elements operate in a comprehensive manner so that organisms are able to sense their environment, make choices, and carry out actions that secure survival and wellness.<sup>10</sup>

## **REVOLUTIONIZING HEALTHCARE WITH AI-ASSISTED DIAGNOSTICS AND PERSONALIZED MEDICINE**

Artificial Intelligence (AI) brings transformative changes to healthcare systems that help doctors detect illnesses earlier and deliver more precise diagnostic results and customized treatments. The AI-based lung cancer screening initiative in Karnataka has achieved success by detecting 133 cases of high lung nodule malignancy together with identifying approximately 3000 prospective TB cases. This breakthrough demonstrates how AI offers a solution to important healthcare problems, especially when resources are limited<sup>11</sup>.

Several Indian startups, together with organizations, have used their AI-based diagnostic technologies to establish India as a leader in this domain beyond lung cancer screening programs. Periwinkle Technologies, based in Pune, developed Smart Scope® CX, which uses AI for cervical cancer tests that provide instant results in thirty seconds. The improved technology offers transformative possibilities for cervical cancer prevention efforts, specifically within areas with restricted diagnostic capabilities. Throughout its operation, the Smart Scope® CX successfully detected more than 350,000 cervical cancer cases, which has driven substantial progress in early prevention programs. The technology received the distinguished 2025 Zayed Sustainability Prize because of its positive effects on society.<sup>12</sup>

---

<sup>10</sup> Ertel, Wolfgang. *Introduction to artificial intelligence*. Springer Nature, 2024.

<sup>11</sup> AI-based lung cancer screening in Karnataka detects 133 lung nodule malignancy and nearly 3,000 TB-presumptive cases in last nine months - The Hindu. <https://www.thehindu.com/news/national/karnataka/ai-based-lung-cancer-screening-in-karnataka-detects-133-lung-nodule-malignancy-and-nearly-3000-tb-presumptive-cases-in-last-nine-months/article68465107.ece>

<sup>12</sup> These 10 Companies Are Improving the Healthcare Industry in 2023 | Health Source Magazine. <https://www.healthsourcemag.com/these-10-companies-are-improving-the-healthcare-industry-in-2023-2/>

## LEGAL AND ETHICAL CONSIDERATIONS IN AI-DRIVEN HEALTHCARE

Application of AI in healthcare requires collection and processing of a huge amount of personal health data. Privacy and security of this sensitive information must be ensured. In addition to the information of the Data Protection Laws of India Bill, 2021, which emphasized regulating the flow of individuals' data, India, in 2023, enacted the Digital Personal Data Protection Act or DPDP Act, providing its citizens with a legal basis for protection against any data-processing activity, including the need for explicit consent from individuals before the processing of their respective data. Healthcare professionals and AI developers must adhere to this act to safeguard patient data and maintain confidentiality.<sup>13</sup>

India's AI applications in healthcare are governed by existing laws, as there is no specific act regulating AI in the country. The main regulatory authority for medical devices, including AI-based applications, is already the Central Drugs Standard Control Organization (CDSCO). It is the Central Drugs Standard Control Organisation (CDSCO), which administers the Drugs and Cosmetics Act, 1940 and the Medical Devices Rules, 2017, which together provide definitions and regulations for medical devices.<sup>14</sup>

The Indian Council of Medical Research (ICMR) released comprehensive guidelines last year to help navigate the ethical complexities of AI in healthcare. This includes subjects of informed consent, data privacy, risk minimization and the need for transparency in AI systems. They provide a structure for researchers, developers, and healthcare professionals to enable that ethical principles and respect for patient autonomy are considered when developing AI applications. The use of AI in medical decision making raises questions of accountability in cases of misdiagnosis or systemic failure. Figuring out who's liable — healthcare providers, the developers of any AI tools, or the institutions using these technologies — is a thorny legal question. Setting appropriate guidelines and lawful precedents will be vital to identifying duties and securing the welfare of the patient<sup>15</sup>

---

<sup>13</sup> Choudhary, Mrinalini, et al. "Exploring Ethical Aspects and Regulatory Framework for India's Sustainable Healthcare Sector in the Era of Artificial Intelligence." *Transforming Healthcare Sector Through Artificial Intelligence and Environmental Sustainability*. Singapore: Springer Nature Singapore, 2025. 129-147.

<sup>14</sup> Shirkande, Shrinivas T., and Aparna Patange. "Ethical considerations of AI applications in medicine: A policy framework for responsible deployment."

<sup>15</sup> Sarkar, Avik, Poorva Singh, and Mayuri Varkey. "Healthcare Artificial Intelligence in India and ethical aspects." *AI, consciousness and the New Humanism: Fundamental reflections on minds and machines*. Singapore: Springer Nature Singapore, 2024. 107-150.

Currently, in India, the laws relating to Intellectual Property do not permit algorithms, the key of AI systems, to be patented. This creates a hurdle for developers hoping to protect their AI-powered innovations, especially in healthcare. If you do want to encourage technological change but still consider the public interest, legislators may have to go back and develop a richer set of rules to attitudes.

### **Education and integration of NI & AI**

India is in the process of actively adopting Artificial Intelligence (AI) in its educational framework to enrich learning processes and results by synergizing AI with natural intelligence (NI). The combination of AI with NI has the goal of making education more personalized, increasing accessibility, and equipping learners for an AI-driven world. Rapid changes occur in artificial intelligence for Indian education because educational institutions continue to adopt AI tools for process enhancement. AI provides two main application examples through administrative automation and intelligent educational assistance platforms. AI tools have already started to support educational institutions by using them for student monitoring and customized material adaptation according to individual needs together with automated grading capabilities. Byju's and Vedantu use AI algorithms for delivering customized learning directions that adapt educational content to students' achievements while supporting their individual learning preferences. The Indian government works on multiple education-based government initiatives to bring Artificial Intelligence (AI) into the curriculum while developing new learning approaches that match up with the emerging technological landscape.<sup>16</sup>

National Education Policy (NEP) 2020 declares that educational programs must use AI technology to create digital literacy since it prepares students for technological advancements in the future. The policy supports early education in coding and computational thinking because it produces generations who demonstrate expertise in AI and related technologies. The government demonstrates its dedication to educational innovation through this policy as it strives to achieve worldwide progress.<sup>17</sup>

The National AI Portal of India known as INDIA AI established its operations in May 2020. These organizations collaborate through the Ministry of Electronics and Information

---

<sup>16</sup> Toli, Laxman. "The impact of AI technology on higher education in India: revolutionizing learning and empowering students." (2023).

<sup>17</sup> Singh, Dr I. "NEW EDUCATION POLICY A Review." 2022, <https://doi.org/10.36676/shodh-sagar.2022-indira>.

Technology (MeitY) together with National e-Governance Division (NeGD) and National Association of Software and Service Companies (NASSCOM). The portal operates as a comprehensive platform that distributes AI-related information alongside educational resources together with events to promote both student and professional innovation and democratic AI education<sup>18</sup>.

The Central Board of Secondary Education (CBSE) together with Intel and the Ministry of Education started the "AI For All" program in August 2021. The program features an online self-learning format which targets a wide audience who belong to different occupational groups including students along with workers and elderly individuals. The initiative works to eliminate AI mysteries while creating digital first awareness across Indian national territory. NITI Aayog drafted this strategy to demonstrate how AI can achieve inclusive sector-based development through education programs. The strategy aims to use artificial intelligence tools to create better educational resources which tailor instruction to individual students and minimize inequality in the education system. The strategy accomplishes this through its initiative to build an AI-trained workforce using training programs and capacity-building services.<sup>19</sup>

#### **FUTURE INITIATIVES:**

The Indian government actively supports AI education developments. The "AI for India 2030" initiative defines an integrated plan to introduce AI systems into all elements of India's social-economic structure as well as educational frameworks. The program exists to modernize important fields including agriculture, healthcare and urban planning along with education standing as its central focus. This initiative aims to develop AI literacy and skills for the youth to face upcoming opportunities and challenges. The educational framework of India incorporates extensive measures to implement AI while developing competencies to prepare its citizens for success in an AI-led society. With continuous innovations transforming the education sector, the prospects of generative AI in education look promising. With its capability to deliver personalized learning experiences and administrative synergies, artificial intelligence is likely to be more embedded into education systems. AI can transform India's education system by addressing challenges such as teacher shortages and variance in state-to-state standards, ultimately resulting in a more efficient and inclusive system. Tech & Learning

---

<sup>18</sup> Jain, K. Keerthi, and J. N. V. Raghuram. "Gen-AI integration in higher education: Predicting intentions using SEM-ANN approach." *Education and Information Technologies* 29.13 (2024): 17169-17209.

<sup>19</sup>

provides a glimpse of the future of AI in education through an explanation of how it is expected to revolutionize administrative tasks and teaching practices (Tech & Learning).<sup>20</sup>

## CHALLENGES AND RISKS OF AI INTEGRATION IN EDUCATION

Excessive dependence on AI tools within India's educational system which follows rote learning practices may worsen the existing learning challenges. The usage of AI-generated responses by students can lead them to avoid analytical thinking practices thus they acquire a shallow understanding of concepts. Wired magazine discusses teachers from worldwide institutions who worry these educational tools turn students into passive learners rather than encouraging ongoing educational engagement.<sup>21</sup>

Student education faces significant challenges because AI-driven educational platforms store and manage extensive datasets about their users without proper safeguards for personal information protection. The developing data protection regulations in India create risks for sensitive student information to be improperly used by commercial entities. Robust data security measures should exist to stop students' personal information from falling into improper hands thus safeguarding their privacy and ethical rights.<sup>22</sup>

The current economic differences between sectors represent a powerful hurdle which prohibits AI solutions from reaching a broad student base in Indian education. The cutting-edge AI tools remain out of reach for numerous rural institutions which lack basic digital infrastructure besides the urban facilities and private institutions. The digital access gap creates additional differences between high and low-tier pupils who lack equal opportunities to receive high-quality education. A research study from Tech & Learning reveals the adoption obstacles for underfunded educational institutions which demands government involvement to establish equal educational opportunities.<sup>23</sup>

---

<sup>20</sup> Singh, Anu Raj. "The Future of Vocational Learning in India: How Artificial Intelligence and Creativity Will Shape Learning of Skills in 2030." *Educational Perspectives on Digital Technologies in Modeling and Management*. IGI Global Scientific Publishing, 2024. 293-304.

<sup>21</sup> Karan, Bablu, and G. R. Angadi. "Potential risks of artificial intelligence integration into school education: A systematic review." *Bulletin of Science, Technology & Society* 43.3-4 (2023): 67-85.

<sup>22</sup> Karan, Bablu, and G. R. Angadi. "Potential risks of artificial intelligence integration into school education: A systematic review." *Bulletin of Science, Technology & Society* 43.3-4 (2023): 67-85.

<sup>23</sup> Eden, Chima Abimbola, Onyebuchi Nneamaka Chisom, and Idowu Sulaimon Adeniyi. "Integrating AI in education: Opportunities, challenges, and ethical considerations." *Magna Scientia Advanced Research and Reviews* 10.2 (2024): 006-013.

Right implementation of Artificial Intelligence has the power to increase educational results but it faces various obstacles. India can establish a fair and productive AI-driven educational framework by applying policy updates and dedicating funds to teaching staff training and building facilities while working to address existing risks.<sup>24</sup>

## ETHICAL IMPLICATIONS AND CHALLENGES OF AI AND NI INTEGRATION

Dawn of Artificial Intelligence (AI) and Neural Intelligence (NI) in our lives is giving rise to a new name — ‘Automation Era’ in multiple industries, but it is coming up with certain ethical challenges. AI-powered systems make use of a considerable amount of Personally Identifiable Information resulting in broad surveillance, data leakage and exploitations. Facial recognition and other AI surveillance technologies, which have been adopted by law enforcement agencies but often without effective safeguards For example, the Delhi Police’s Facial Recognition System (FRS) identifies an individual with a similarity threshold of 80% which raises the concerns of privacy violations and false positives.<sup>25</sup>

The biggest fear of AI is its self-learning behaviour in unsupervised manner which can lead to some unpredictable and harmful consequences. At a time when the importance of protecting users’ data has never been greater, no country has so far set out truly comprehensive or fair legislation with the ability to keep up with the quickly-evolving world of AI.

Laws are not amended or enacted at the same pace as technology advances, leading to gaps in regulation. It is safe to say that data today governs lives, and those who have “vast” amounts of data can determine how humans think, consume, and live. Unchecked power creates a dystopia in which we become unwitting friends of the AI, addicted to algorithm-driven approaches to decision-making in which we have forsaken control of our lives. Data usage is not simply a privacy issue, but an existential threat against personal liberty and self-governance. The true issue here is controlling AI so that it doesn't become a mechanism of governance of human thought and an all-too-autonomous envoy of human thought. AI must be integrated without undermining human reasoning or self-determination. Mandatory human

---

<sup>24</sup> Saputra, Indra, et al. "Integration of Artificial Intelligence in Education: Opportunities, Challenges, Threats and Obstacles. A Literature Review." *The Indonesian journal of computer science* 12.4 (2023).

<sup>25</sup> Jain, Anushka. “Delhi Police’s Claims That FRT Is Accurate at 80% Are 100% Scary.” *Internet Freedom Foundation*, 17 Aug. 2022, [internetfreedom.in/delhi-polices-frt-use-is-80-accurate-and-100-scary/](https://internetfreedom.in/delhi-polices-frt-use-is-80-accurate-and-100-scary/). Accessed 21 Feb. 2025.

review mechanisms, when integrated across various AI-powered applications of governance in a proactive manner, can further reinforce India's leadership in AI ethics. If misused, AI can reduce people to puppets, awaiting instructions and response from the entity that owns their data, thus making it necessary to create strong ethical guidelines and mechanisms for the governance of AI. The lack of strong data protection laws increases these precious risks. India's Digital Personal Data Protection (DPDP) Act, 2023, while delaying the impact of AI, does not adequately address AI-generated privacy risks. The Paris AI Action Summit, 2025, jointly led by India and France, highlighted the importance of strict AI regulations to secure data and simultaneously drive innovation in a global tech landscape.<sup>26</sup>

One of the most pressing the ethical challenges in AI governance is algorithmic bias. AI models based on incomplete or prejudiced datasets can amplify societal inequalities. In 2018, Amazon scrapped a hiring tool using artificial intelligence after discovering it was biased against women.<sup>27</sup> Caste, gender and regional biases in the datasets in India can cause exclusionary outcomes in AI-powered governance.

## **ADDRESSING THE POTENTIAL FOR JOB DISPLACEMENT AND ECONOMIC INEQUALITY**

Automation specifically powered by AI threatens job security, especially in industries relying on human labor. AI could displace 85 million jobs in India by 2025, according to estimates by the World Economic Forum.<sup>28</sup> Low-skilled workers in the fabrication, BPOs, and gig economy are particularly at risk. India should also focus on AI-powered reskilling initiatives and human-centered automation policies to reduce economic disparities. An appropriate AI governance structure should create superior incentives for human-AI collaboration rather than human replacement. Such efforts position India as a potential leader in the Global South's AI governance in realising policies that provide inclusive AI-driven growth.

---

<sup>26</sup> "AI Action Summit Co-Chaired by France and India." *La France En Inde / France in India*, 2025, in.ambafrance.org/AI-Action-Summit-co-chaired-by-France-and-India. Accessed 21 Feb. 2025.

<sup>27</sup> BBC. "Amazon Scrapped 'Sexist AI' Tool." *BBC News*, 2018, www.bbc.com/news/technology-45809919.

<sup>28</sup> Russo, Amanda. "Recession and Automation Changes Our Future of Work, but There Are Jobs Coming, Report Says." *World Economic Forum*, World Economic Forum, 20 Oct. 2020, www.weforum.org/press/2020/10/recession-and-automation-changes-our-future-of-work-but-there-are-jobs-coming-report-says-52c5162fce/.

## FUTURE DIRECTIONS AND OPPORTUNITIES

Research in AI and NI is leading to neuromorphic computing, AI that grows and adapts to its environment (its own bodybuilding), XAI (explainable AI), and AI ethics. Interpretability and transparency are crucial as AI systems grow more complex. Researchers are working on creating AI models that can generate human-understandable explanations for their decisions to build trust, especially in sensitive fields like healthcare, finance, and self-driving cars. AI is anticipated to be integrated with new emerging technologies like as quantum computing, blockchain, and edge computing, which will change AI's capabilities as security, efficiency, and computing power will all be enhanced.

Sustainable AI development is the result of collaboration between governments, industries, and academia. The Paris AI Action Summit highlights the importance of global collaboration to create common standards and ethical AI practices.<sup>29</sup> India can act as a bridge between the Global South and developed countries to nurture inclusive AI policy. By bolstering collaborations with premier institutes like IITs, IISc, and global AI research hubs, we can innovate responsibly, ensuring AI contributes to, rather than compromises, our societal fabric.

## POLICY RECOMMENDATIONS FOR RESPONSIBLE AI DEVELOPMENT AND DEPLOYMENT

Policymakers should work toward creating strong regulatory frameworks that prioritize transparency, fairness, and accountability to maximize the benefits of AI, while reducing its risks. Establishment of National AI Governance Authority to regulate compliance with AI ethics, bias detection and algorithmic audit.<sup>30</sup> Making India's Digital Personal Data Protection Act more robust against AI-specific issues, applying risk-based AI governance frameworks and enforcing ethical standards can help this fight against discrimination and misuse of data.

### Long-Term Vision for a Human-Centered AI Future

AI can curtail corruption, improve transparency and hold to account governance and financial payment transactions. AI can also apply blockchain technology to facilitate secure, tamper-

---

<sup>29</sup> Govind Nelika. "Navigating the AI Frontier: Analysis of the 2025 Paris AI Action Summit – Center for Land Warfare Studies (CLAWS)." *Claws.in*, 12 Feb. 2025, [www.claws.in/navigating-the-ai-frontier-analysis-of-the-2025-paris-ai-action-summit/](http://www.claws.in/navigating-the-ai-frontier-analysis-of-the-2025-paris-ai-action-summit/). Accessed 21 Feb. 2025.

<sup>30</sup> AAYOG, NITI. "National Strategy for Artificial Intelligence." *NITI AAYOG*, June 2018, [www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf](http://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf). Accessed 17 Feb. 2025.

proof transactions which reinforce trust in certain sectors. UPI-based digital transactions have taken the entire country by storm cutting down cash-based corruption in a big way ensuring traceability and accountability.<sup>31</sup> AI-powered auditing solutions can also help monitor financial activities in real-time, detecting fraudulent patterns and preventing illicit transactions. Also, AI intervention automates public sector operations, thus minimizing human participation and preventing opportunities for bribery and other corrupt practices.<sup>32</sup> The use of AI in e-governance, procurement and regulatory compliance makes for a more transparent and accountable administrative system.

Ensuring Humans First, a Future with Sustainability and Ethical Governance in AI The nature of AI should make it an enabler and not a controller of human decisions, creating human-AI collaboration, not replication. Future Research Areas: Education, Environmental Impact, and Climate Action On a basic level level, efforts should be made to promote digital literacy now that artificial intelligence is available.<sup>33</sup> With its expertise in AI ethics, India has a unique opportunity to establish global norms for human-values based AI and societal needs.

## CONCLUSION

The fusion of artificial and natural intelligence holds incredible potential for tackling global challenges and enhancing human capabilities across various fields. As explored in this paper, the synergy between AI and human cognition can revolutionize healthcare through advanced diagnostics and personalized treatment, transform education with adaptive learning experiences, and drive sustainability efforts in environmental conservation.

However, unlocking this potential comes with significant ethical, legal, and societal considerations. Key challenges include safeguarding data privacy, mitigating algorithmic bias, addressing job displacement concerns, and ensuring human autonomy in AI-assisted decision-making. To navigate these complexities, we need robust governance structures, global collaboration, and interdisciplinary research to develop responsible AI systems that align with human values.

---

<sup>31</sup> Sakuntala, S. Sri, et al. "The complexity of corruption and recent trends in information technology for combating corruption in India." *Public Administration and Policy* 27.2 (2024): 126-139.

<sup>32</sup> Adam, Isabelle, and Mihály Fazekas. "Are emerging technologies helping win the fight against corruption in developing countries." *Pathways for Prosperity Commission Background Paper Series* 21 (2018): 1-34.

<sup>33</sup> Mann, Hamilton. *Artificial Integrity: The Paths to Leading AI Toward a Human-Centered Future*. John Wiley & Sons, 2024.

Looking to the future, emerging technologies like neuromorphic computing and explainable AI offer promising opportunities to deepen AI-human integration. By fostering collaboration among governments, industries, and academia, we can shape an AI landscape that complements rather than replaces human intelligence. Ultimately, the goal is to build AI systems that empower individuals, promote inclusivity, and contribute to societal well-being. As we move through this transformative era, it's critical to balance innovation with ethical responsibility. By ensuring AI serves humanity's best interests, we can create a future where technology and human intelligence coexist harmoniously, driving progress and improving lives worldwide.

